

OBJECTIVES: Evaluate comparative effectiveness and economic impacts of banked donor milk for premature infants to support evidence-based decision-making for implementing a public milk bank managed by a blood bank in the province of Québec. **METHODS:** A systematic review of the literature was performed to identify clinical benefits of banked donor milk compared to formulas for reducing complications in preterm or very low birth weight (VLBW) infants. Epidemiology and costs of these complications were obtained from provincial databases (Régie de l'Assurance Maladie du Québec; Ministère de la Santé et des Services Sociaux) to estimate the economic impact of using banked donor milk in this vulnerable population. Milk bank budget was estimated in the context of the Québec blood bank. **RESULTS:** Evidence available indicates that the major benefit associated with the use of banked donor milk compared to formula in premature or VLBW infants is a reduction by 70% of the rate of necrotizing enterocolitis (NEC). Based on historical data, the incidence rate of NEC in the province of Québec, Canada, was of 70 cases during a one year-period between 2008 and 2009 which resulted in total direct costs of 2010US\$5,426,128 for the Québec healthcare system. It is estimated that the use of banked donor milk in neonatology would reduce the number of NEC cases by 49 and the number of fatalities by 12 annually, resulting in potential savings. It is proposed that implementing a public milk bank in a blood bank setting would result in economic efficiencies. **CONCLUSIONS:** Findings of the present study underlines the clinical benefits of banked donor milk compared to formulas in reducing the incidence of NEC in premature infants. Implementing a public milk bank in a blood bank setting could be clinically and economically beneficial.

PIH5

RISK OF HIP AND SUBTROCHANTERIC OR DIAPHYSEAL FEMORAL FRACTURES IN ALENDRONATE USERS

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OBJECTIVES: Atypical femoral diaphyseal fracture and long-term alendronate use may be linked. The protective effect and the risk of atypical femoral fracture of alendronate and other anti-osteoporosis drugs in older Taiwanese women were evaluated. **METHODS:** A population-based retrospective cohort was obtained from the 2000 to 2009 Taiwan National Health Insurance (NHI) data. Subjects hospitalized with vertebral or hip fracture to 2007 were selected using 2000 as a run-in year to identify incident osteoporotic fractures. All patients receiving alendronate, raloxifene, calcitonin salmon, or teriparatide after index fracture diagnosis formed the treated cohort. An untreated cohort was obtained accordingly. Patients were followed until endpoint (hospitalization for hip fracture or atypical femoral diaphyseal fracture) or end of study period. Cox proportional hazards models were used to assess the association between alendronate and other anti-osteoporosis drugs and fracture risks. **RESULTS:** Among the 11,278 patients (mean age, 77 years), 2,425 (21.5%) received alendronate (mean follow-up, 1228±797 days), 2,694 (23.9%) received other anti-osteoporosis drugs (mean follow-up, 1069±639 days), and 6,159 (54.6%) remained untreated (mean follow-up, 1357±835 days). Head-to-head comparisons revealed alendronate's superiority (HR 0.77, 95% CI 0.62–0.95) over other anti-osteoporosis drugs in hip fracture prevention. The risk of subsequent hip fracture was significantly reduced (adjusted HR 0.27, 95% CI 0.15–0.78) in long-term alendronate users. Risk of atypical femoral fracture was similar for alendronate versus other anti-osteoporosis drugs (adjusted HR 0.49, 95% CI 0.40–1.47). Short- or long-term alendronate use was not associated with higher risk of atypical femoral fractures. **CONCLUSIONS:** Alendronate poses no greater risk of atypical femoral fracture than other agents, and its benefits in reducing hip fracture risk significantly outweigh this concern.

PIH6

THE DEFINITION AND PREVALENCE OF PSYCHOTROPIC POLYPHARMACY IN MEDICAID CHILDREN AND ADOLESCENTS

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OBJECTIVES: This study evaluated the persistent use of psychotropic polypharmacy and characterized how well the cross-sectional operational definitions of polypharmacy used in published pediatric studies accurately identify patients' prescribed long-term treatment. **METHODS:** The prevalence of psychotropic polypharmacy was defined as receiving ≥ 14 days, ≥ 30 days, ≥ 60 days, and ≥ 90 days of overlapping psychotropic prescription fills. Descriptive analysis was used to compare the prevalence findings based on Multistate Medicaid data involving children and adolescents 6 to 18 years of age. A sensitivity analysis was conducted to further explore the extent to which the cross-sectional operational definitions of polypharmacy used in published literature identified patients who were prescribed psychotropic combinations on a long-term basis. **RESULTS:** Analysis of Multistate Medicaid data revealed that 218,696 children and adolescents filled at least one psychotropic prescription in 2005. Of these patients, 22.52% received psychotropic combinations for ≥14 consecutive days. The observed rate of polypharmacy dropped to 21.07% with ≥30 days overlap criterion and to 16.44% with 60 days overlap criterion. 25%-60% of patients with polypharmacy in cross-sectional definitions were likely receiving two or more psychotropic agents on a short-term basis. Furthermore, cross-sectional definitions failed to identify a 40% to 70% of patients on long-term polypharmacy (≥60 day overlap). **CONCLUSIONS:** The long-term use of psychotropic polypharmacy in Medicaid children and adolescents in this study appeared modest. The comparison between our observations and previous studies illustrate the considerable problems that arise when comparing rates of polypharmacy across studies with inconsistent operational definitions.

PIH7

POTENTIALLY INAPPROPRIATE MEDICATION USE AMONG OLDER ADULTS IN THE UNITED STATES IN 2007

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OBJECTIVES: To determine the prevalence of potentially inappropriate medication (PIM) use among older adults in the USA in 2007 and compare the prevalence to that in 1996, and to identify risk factors for PIM use. **METHODS:** Primary data source was the 2007 Medical Expenditure Panel Survey. This is a nationally representative survey of the U.S. community-dwelling population. Study subjects were those respondents aged 65 or older. A retrospective cohort study was conducted. PIMs were identified according to the Zhan criteria. Prevalence rates of the 33 PIMs utilization by medications and respondents' characteristics were determined. Risk factors for PIM use were examined using logistic regression after controlling for confounding factors. **RESULTS:** The 33 PIMs use on the Zhan list declined between 1996 and 2007. In 2007, 13.8% (95% confidence interval [CI], 12.5%–15.2%) of the elderly or 5.4 million older adults received at least 1 of the 33 PIMs; and 1.5% (95% CI, 1.1%–2.0%) used at least 1 of the 11 PIMs that should always be avoided. The most commonly misused medications were propoxyphene, amitriptyline, antihistamines, diazepam, muscle relaxants, gastrointestinal antispasmodics, and indomethacin. High-risk older patients for PIM use included women, people in the South, persons receiving more prescriptions, and those who rated their health status as fair and poor. Comparing to data in 1996, the prevalence of PIMs decreased from 6.9 million to 5.4 million although the top three PIMs remained propoxyphene, amitriptyline and promethazine. The older people who took at least 1 of the 11 PIMs declined from 0.84 million to 0.59 million. **CONCLUSIONS:** The 33 PIMs use in older Americans decreased but was still prevalent in some subgroups and for some drugs. Drug utilization review for elderly population is still needed.

Individual's Health – Cost Studies

PIH8

THE ECONOMIC IMPACT ATTRIBUTABLE TO THE INAPPROPRIATE PRESCRIPTION OF BENZODIAZEPINES IN THE ELDERLY LIVING IN THE COMMUNITY

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OBJECTIVES: The purpose of this study is to describe health service use and related costs associated with potentially inappropriate prescriptions (PIP) of benzodiazepines (BZD) in the elderly living in the community in the province of Quebec, Canada. **METHODS:** The cohort consisted of a representative sample (n=2494) of Quebec's community-dwelling elderly (>65 years of age) respondents of the ESA survey (Survey on older adult's mental health, 2006). The cost analysis was carried out from a healthcare system perspective and the definition of the PIP of benzodiazepines was based on Beers' criteria (Fick, 2003). Multivariate regression analyses were carried out to assess the influence of PIP of BZD on healthcare costs in the elderly. **RESULTS:** 30% (n=744) of participants were using BZD and 45% (n=331) of the users received at least one PIP. Higher healthcare costs (14196\$ vs. 9992\$; p<0.0001) were observed for participants with the presence of PIP of BZD in comparison with those without PIP. When individual and health care system factors were controlled, health care costs were still higher for BZD users with PIP without being statistically significant at a 95% level (β (log(\$)) = 0.109; IC95: [-0.040, 0.259]; Δ \$: 1180\$). Factors associated with higher healthcare costs were gender and physical health status. **CONCLUSIONS:** Using both administrative and survey data, this study provides new data that will help decision makers better understand the economic impact associated with the inappropriate prescriptions of BZD. The significant association between the PIP of BZD and the healthcare costs observed in the univariate analysis seems to be mainly explained by the patient's physical health status. Nonetheless, with the current economic and clinical context, particular attention should be given to the inappropriate prescriptions of BZD, affecting 45% of users and 14% of the senior population in Québec.

PIH9

COSTS TO THE NATIONAL HEALTH INSURANCE SCHEME OF THE FREE MATERNAL HEALTH SERVICE CHALLENGES AND IMPLICATIONS FOR SUSTAINABILITY IN GHANA

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OBJECTIVES: The main objective of this study was therefore to examine the cost of the free maternal health services to the southern part of Ghana and explore factors that contribute to these costs. **METHODS:** Available routine financial claim records for 2009 were used to compile the cost information for the various maternal services using a compilation sheet for the three national insurance scheme accredited facilities and the scheme office in the area. The financial cost of antenatal, postnatal, delivery, abortion and the overall costs of all the maternal health services were obtained by facility type for both services and drugs. **RESULTS:** Among other findings, we found that average cost for Ridge hospital antenatal GH¢14.28(US\$9.85), postnatal GH¢63.54(US\$43.82) and normal deliveries GH¢51.03(US\$35.19) whereas that for Adabraka Polyclinic antenatal GH¢15.12(US\$10.43), postnatal GH¢24.03(US\$16.58) and normal deliveries GH¢37.64(US\$25.96). The results of the study showed that GH¢1,358,647.98(US\$936,998.61) was spent in 2009 for maternity services for Osu-Klottey sub-metro and this represented about 7.7% of expenditure of the British Grant. The financial cost of antenatal care was GH¢289,094.96(US\$199,375.83), postnatal care was GH¢159,913.34(US\$110,285.06) and spontaneous vaginal delivery was